Auditors With or Without Styles? Evidence from Unexpected Auditor Turnovers

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We are grateful for helpful comments from Kevin Chen, Mingyi Hung, Bin Ke, Shiheng Wang, Guochang Zhang, and seminar participants at Hong Kong University of Science and Technology and National Cheng-Chi University. All errors are our own.

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Abstract: Using unexpected auditor turnovers as a quasi-experiment, in this study we examine whether individual auditors exhibit a significant impact on audit quality. More specifically, focusing on auditor turnovers precipitated by the incumbent auditor's sudden death or by resignation due to health issues or a career change, we investigate audit quality changes surrounding these unexpected events. While we find some evidences that unexpected auditor turnovers are associated with significant audit quality changes for non-Big 4 audit firms, this is not the case for auditor turnovers at Big 4 firms even though there are greater differences in personal characteristics between outgoing and successor auditors in Big 4 firms. This finding suggests that notwithstanding differences in auditors' personal characteristics, standardized audit procedures and strong internal controls can constrain individual auditors in large audit firms from impacting audit quality.

I. Introduction

The disclosure of signing audit partners in the audit report has been a regulatory focus in many countries over recent years. In Europe, the Company Law Directive issued by the European Union (EU) in 2006 called for member states to require audit partners to sign the audit report, and as of November 2013, 27 of the 28 EU member countries have enacted such legislation. In the U.S., the Public Company Accounting Oversight Board (PCAOB) has also called for identification of audit partners in the auditor's report, arguing that the name of audit partners "may help the investing public identify and judge quality, leading to better auditing" (PCAOB [2011, 2013]).

An important assumption underlying these regulations is that individual auditors have a significant impact on audit quality. This assumption is intuitive, as ultimately it is individuals who design and conduct audits (Kachelmeier [2010]). However, audit firms are typically organized as partnerships, and this organizational form is supposed to warrant a stable service quality via mutual monitoring (Levin and Tadelis [2005]). As such, audit firms often have internal rules that "*guide and standardize the auditors' application of auditing and accounting standards*" (Francis, Pinnuck, and Watanabe [2014]), as well as computer-assisted audit techniques (CAATs) that standardize audit procedures (e.g., Janvrin, Bierstaker, and Lowe [2008, 2009], Curtis et al. [2009]). Such quality control mechanisms, in addition to the fact that audit engagements are typically conducted by a team of auditors rather than a single auditor, are likely to reduce the scope for individual auditors to have incremental influence on audit quality (Bamber and Bamber [2009]). Empirically, it is not easy to verify the assumption that individual auditors impact audit quality, as historically few countries have mandated the disclosure of individual auditors. Moreover, even where individual auditors are identified, endogeneity associated with auditor-client assignments makes it

difficult to investigate the *causal* relation between individual auditors and audit quality (DeFond and Zhang [2014]).

In this study we employ *unexpected* auditor turnovers to investigate whether individual auditors have a *causal* impact on audit quality. Specifically, we focus on auditor turnovers that are precipitated by the death or unexpected resignation of an incumbent audit partner and examine how audit quality changes surrounding these events. Importantly, as these turnovers are unlikely to be planned by the audit firm or the client, they represent an *exogenous* shock to the supply of audit services. If individual auditors have a non-trivial impact on audit quality, we should observe significant changes in audit quality surrounding unexpected auditor turnovers after controlling for other determinants of audit quality. In contrast, if we were to observe no significant change in audit quality following unexpected auditor turnovers, this would cast doubt on the assumption that individual auditors affect audit quality.

To test our hypothesis, we obtain data on individual auditors from financial reports filed by public firms in Taiwan. There are several benefits of using data from Taiwan. First, Taiwan has a long history of mandating the disclosure of two signing audit partners in the audit report, thus providing a long sample for empirical estimation (Chin and Chi [2009], Chi and Chin [2011]). Second, Taiwan's audit market structure is similar to that of large economies such as the U.S. or Australia, with Big 4 auditors providing more than 80% of audit services to public firms. Our findings should therefore generalize to other countries.

We begin by following Gul, Wu, and Yang [2013] and Aobdia, Lin, and Petacchi [2015] to use an auditor fixed effects approach. Consistent with Gul, Wu, and Yang [2013], we find that the auditor fixed effects are jointly significant in our sample, which seems to suggest that individual auditors have personal styles. When we separate

the sample into Big 4 and non-Big 4 audit firms, we find some evidence that auditor fixed effects exhibit significant greater explanatory power for non-Big 4 firms.

The auditor fixed effects approach has a few disadvantages, however. First, as noted in Aobdia, Lin, and Petacchi [2015], the auditor fixed effects approach does not establish causality. As such, any observed association between auditor fixed effects may simply reflect an endogenous auditor-client matching (e.g., clients with good earnings quality may select more reputable auditors, or vice versa). Second, using an F-test without solid statistical assumptions to determine the joint significance of a large number of indicator variables could lead to erroneous inferences (Wooldridge [2002]; Fee, Hadlock, and Pierce [2013]).

As an alternative to auditor fixed effects, in our main analysis we investigate whether there are significant audit quality changes surrounding unexpected auditor turnovers – turnovers precipitated by an incumbent audit partner's death or unexpected resignation due to health issues or a career change. We first compute audit quality changes surrounding unexpected auditor turnovers and compare these changes to those of control firms identified by the propensity score matching approach. Univariate statistics and multivariate regression results indicate that the two groups experience similar changes in audit quality. In other words, there is no abnormal change in audit quality following unexpected auditor turnovers. However, when we partition the sample based on audit firm size (i.e., Big 4 firms versus non-Big 4 firms), we find that while unexpected departures of audit partners of Big 4 firms do not trigger significant changes in audit quality, those of non-Big 4 firms do under some circumstances, in particular when we consider discretionary accruals as the measure of audit quality.

This finding is similar even when we solely focus on the small sample of turnovers triggered by the incumbent auditor's sudden death or resignation due to

serious sickness or when we expand the sample of unexpected turnovers to include mandatory auditor rotations and mandatory retirements. This again suggests that individual auditors do not exhibit significant influence over audit quality.

Interestingly, with more audit partners in house, Big 4 firms tend to appoint a successor audit partner with very different personal traits from the outgoing audit partner. In contrast, the differences in personal characteristics between the outgoing and the incoming auditors are less obvious for non-Big 4 firms as compared to Big 4 firms. This result supports the notion that in the presence of strong internal controls and standardized audit procedures, individual auditors in large audit firms are unlikely to reflect their personal traits upon audit quality. In contrast, auditors in smaller audit firms are more likely to exhibit idiosyncratic styles.

Our results are similar if we focus on auditor turnovers with more "chances" for the successor to exhibit personal influences. Specifically, for Big 4 firms, we only keep unexpected auditor turnovers with larger discretionary accruals left behind by the outgoing auditor and then perform the same analysis. Using this sample, we again do not observe any significant change in audit quality surrounding auditor turnovers. This confirms Big 4 are able to maintain a consistent level of audit quality when facing unexpected events.

Our results remain qualitatively similar after controlling for the incoming auditor's busyness across Big and non-Big 4 firms. That is, we ensure that the incoming auditors in Big 4 and non-Big 4 have a similar number of clients when they take over the unexpected new client. Again, we still do not observe any significant change in audit quality surrounding auditor turnovers.

Our findings together suggest that whether individual auditors have significant influences over audit quality depends on the organizational structures of their audit

firms rather than personal traits. Our study therefore contributes to the literature on audit quality. In their review, DeFond and Zhang (2014) call for more research to better understand the relation between individual auditors' personal characteristics and audit quality. While a few studies such as Gul, Wu, and Yang [2013] and Aobdia, Lin, and Petacchi [2015] attempt to answer this question, they face the endogeneity problem associated with auditor-client assignments and thus have difficulty documenting a causal association between individual auditors and audit quality. Moreover, as we show, the auditor fixed effects approach used by prior studies is subject to additional methodological issues that can lead to incorrect inferences.[1] Our study overcomes these issues by considering auditor turnovers precipitated by "unexpected" departures of incumbent audit partners. This setting enables us to cleanly examine the causal association between individual auditors and audit quality.

Our empirical results cast doubt on the argument that individual auditors have personal styles, in particular for auditors employed by Big 4 firms, as we find no evidence of abnormal changes in audit quality surrounding unexpected auditor turnovers. Notably, this finding does not suggest that individual auditors do not have personal traits, but rather that differences in characteristics across individual auditors are muted by large audit firms' infrastructure. In contrast, individual auditors of small audit firms seem to have more of an effect on audit quality, suggesting that individual auditors matter more for audit quality when audit procedures are less standardized and internal controls are weaker. As such, one would expect non-Big 4 audit firms to have greater variances in service quality than Big 4 firms. In other words, our finding

[1] Despite methodological differences, our finding that individual auditors have personal impacts over audit quality can be reconciled with that of Gul, Wu, and Yang [2013]. That is, Gul, Wu and Yang's [2013] finding that individual auditors in China are significantly associated with audit quality measures could be driven by the fact that China's audit market is dominated by local audit firms (e.g., non-Big 4 firms).

suggests that Big 4's reputations not only build upon a high level of quality, but also on the consistency and uniformity of their service.[2]

The remainder of the paper is organized as follows. Section II reviews related literature and develops our empirical hypothesis, and Section III describes the sample. Section IV presents the empirical analysis. Section V concludes the paper.

II. Literature Review and Hypothesis

While anecdotal evidence suggests that individual auditors matter for audit quality, academic research has not examined this issue until recently, possibly due to data limitations as to date only a few countries require such disclosure. Using data from China and the "fixed effects" approach adopted from Bertrand and Schoar [2003], Gul, Wu, and Yang [2013] show that individual auditor fixed effects are significantly associated with audit quality measures such as discretionary accruals or audit opinions, which they interpret as evidence that individual auditors affect audit quality.[3] Similarly, also using auditor fixed effects, Aobdia, Lin, and Petacchi [2015] show that clients audited by individual auditors with higher quality (those with more pronounced fixed effects) have higher earnings response coefficients, lower IPO underpricing, and more favorable debt terms. Using Swedish data, Amir, Kallunki, and Nilsson [2014] find that audit partners with criminal records have a more risky client portfolio than those do not. Relatedly, Knechel, Vanstraelen, and Zerni [2015] show that some audit partners in Sweden are more likely to consistently commit Type I errors (issuing a going concern opinion on a non-distressed client) or Type II errors (failing to issue a going concern

[2] A consistent high quality of service is stated publicly by Big 4. For example, KPMG Global states that "global capability and consistency are central to the way we work….." (www.kpmg.com/global/pages/default.aspx.)

[3] The same technique has been used to study the impact of individual managers on various accounting choices (e.g., Bamber, Jiang, and Wang [2010], Dyreng, Hanlon, and Maydew [2010], Ge, Matsumoto, and Zhang [2011]).

opinion prior to a client's bankruptcy). This again seems to suggest that individual auditors have idiosyncratic styles.[4]

However, the above results are also consistent with endogenous client-auditor assignment (DeFond and Zhang [2014]).[5] As Aobdia, Lin, and Petacchi [2015] note, individual auditors may intentionally select clients that cater to their clientele portfolio, or clients may select auditors that better fit their characteristics. For example, more reputable (less reputable) individual auditors may only accept clients with low (high) risk and high (low) earnings quality – clients that have lower (higher) information asymmetry and in turn receive more (less) favorable debt terms from the capital market. Similarly, Minutti-Meza [2013] shows that an auditor's industry expertise disappears after controlling for the client's industry membership and size, which suggests that audit quality is highly correlated with client characteristics. At the audit firm level, prior work shows that Big 4 audit firms have a preference for certain types of clients, such as those with low audit risk (DeAngelo [1981], Krishnan and Krishnan [1997], Morgan and Stocken [1998], Johnston and Bedard [2003, 2004], Lawrence, Minutti-Meza, and Zhang [2011]).[6] Relatedly, Big 4 are shown to assign lower (higher) quality auditors to clients listed in weaker (stronger) institutional environment (Ke, Lennox, and Xin [2015]). Taken together, these results suggest that prior findings are not due to a causal association between auditors and audit quality, but rather are outcomes of an endogenous matching process. Moreover, Fee, Hadlock, and Pierce

[4] Similarly, Chen, Sun, and Wu [2010] find that client importance measured at the individual auditor level is positively or negatively correlated with the propensity to issue modified audit opinions (MAOs), depending on the institutional environment.

[5] Roberts and Whited [2013] refer to this kind of endogeneity as simultaneity, which occurs when the dependent variable (audit quality measures) and independent variable(s) are determined simultaneously in equilibrium. For example, individual auditors may affect audit quality, or audit quality may affect individual auditors.

[6] Prior studies that recognize the potential endogeneity in auditor-client assignment address the problem using, for example, two-stage selection (e.g., Hogan [1997], Chaney, Jeter, and Shivakumar [2004]) or propensity score matching (e.g., Armstrong, Jagolinzer, and Larcker [2010], Eshleman and Guo [2014]). These approaches, however, attenuate rather than eliminate the endogeneity concerns (Cochran and Rubin [1973]).

[2013] point out that without proper statistical assumptions, using an F-test to test the joint significance of a large number of individual fixed effects could be problematic, as we will confirm later.

To avoid these issues, we rely on "unexpected" auditor turnovers, which we define as those turnovers triggered by an incumbent audit partner's sudden death or unanticipated resignation due to serious sickness or a career change. Such turnovers are not likely to be planned by the client or the audit firm, and therefore are not caused by changes in client or audit firm characteristics. Thus, any changes in audit quality surrounding these turnovers can be attributed to idiosyncratic differences between the outgoing and incoming audit partners. This argument suggests that if individual auditors do indeed have a causal impact on audit quality, we should observe significant changes in audit quality surrounding unexpected auditor turnovers.

It may be the case, however, that individual auditors do not influence audit quality. Theoretically, Levin and Tadelis [2005] argue that partnership as an organizational form helps to maintain a stable service quality. That is, mutual monitoring among audit partners ensures uniformed audit procedures and in turn promotes stable audit quality. In addition, regulatory oversight, particularly since the introduction of the Sarbanes-Oxley Act (DeFond and Francis [2005], DeFond and Lennox [2011]), could deter individual auditors from exerting personal discretion in audit engagements (Church and Shefchik [2012], Hilary and Lennox [2005]). In addition, accounting standards and increased adoption of computerized audit systems by audit firms, particularly Big 4 audit firms, result in standardized audit procedures that decrease the room for individual auditors' discretion (Janvrin et al. [2008, 2009], Curtis et al. [2009], Francis, Pinnuck, and Watanabe [2014]). Thus, when a signing audit partner is replaced, an audit firm's procedures and remaining team members are

unchanged, which is likely to reduce variation arising from audit partner turnovers. This argument suggests that if individual auditors do not have a causal impact on audit quality, we should not observe significant changes in audit quality surrounding unexpected auditor turnovers.

In sum, whether individual auditors can cause significant changes in audit quality surrounding unexpected auditor turnovers is an open question. We state our hypothesis in null form as follows:

H1: There is no significant change in audit quality surrounding unexpected auditor turnovers.

III. Sample

We test our hypothesis using data from Taiwan. Taiwan has a long history of requiring the disclosure of signing audit partners. Moreover, in the Taiwanese audit market, Big 4 firms audit more than 80% of public firms, which is similar to the U.S. or Australia. We obtain financial data and the names of signing audit partners for all public firms from *Taiwan Economic Journal* (TEJ). Our sample spans the 1995 to 2011 period. During this period, 1,023 individual auditors appear in public firms' audit reports, with the average number of public firms audited ranging from 771 in 1995 to 1,752 in 2011. We begin our analysis using the individual fixed effects approach to assess the generalizability of the data. To do so, we follow Gul, Wu, and Yang [2013] to impose the following criteria: (1) the auditor must audit at least two distinct companies; (2) the auditor must audit a client for at least two years; and (3) there must be at least three years during which the auditor does not provide audit services to a given client. The number of individual auditors drops to 637 after we include the necessary control

variables. We obtain a final sample of 20,657 firm-year observations for the fixed effects analysis.[7]

Table 1 provides descriptive statistics for the audit firms in our sample and for the variables used in the empirical analysis. Panel A reveals that, on average, our sample contains around 38 audit firms each year. We find that each audit firm has more than one branch office, audits around 34 public firms annually, and has 15 signing audit partners. Finally, each individual audit partner audits around 18 unique public firms, which are used in estimating individual audit partner fixed effects. Panels B and C, which provide sample statistics for Big 4 and non-Big 4 audit firms, respectively, show that Big 4 audit firms are much larger than non-Big 4. For example, on average a Big 4 firm has around 4 branch offices, while a non-Big 4 firm typically has only one branch office. Moreover, on average, a Big 4 audit firm has 228 public clients and 83 signing partners, whereas a non-Big 4 firm has only 6 public clients and 5 audit partners. Finally, each audit partner of a Big 4 firm needs to audit around 26 public clients, while their counterparts in non-Big 4 firms audit only 6 public clients. These results imply that audit partners of Big 4 audit firms are not able to spend as much time per client as audit partners of non-Big 4 firms. Finally, the descriptive statistics in Panel D suggest that our sample firms are comparable to those in prior studies that also focus on public firms in Taiwan (Chen, Lin, and Lin [2008], Aobdia, Lin, and Petacchi [2015]).

The most important task for our study is to identify "unexpected" auditor turnovers. To do so, we first identify all auditor turnovers during our sample period. As Taiwan requires that two auditors sign the audit report, we consider a company as having an auditor turnover if there is a change in at least one audit partner during the

[7] Observations drop to 19,696 when the dependent variable is discretionary accruals due to data requirements. Specifically, when we compute discretionary accruals, we require each industry-year to have at least 10 observations. The fact that observations for discretionary accruals are less than the other proxies for audit quality also holds for subsequent analyses.

year (Chi et al. [2009], Gul, Wu, and Yang [2013]). This definition leads to 7,581 firm-year observations experiencing auditor turnovers during the sample period. As we have 23,776 firm-year observations (before considering the availability of control variables for the regression analyses), the turnover rate is around 31.9% -- that is, each year around one-third of public firms have one new signing audit partner. Among the 7,581 turnovers, 4,931 (65%) are within-firm reassignments. These events are voluntary auditor rotations driven by the five-year rotation mandated by the Taiwanese government since 2004 (Bamber and Bamber [2009], Chi et al. [2009]): many of the voluntary auditor rotations occur one or two years before the incumbent auditor has reached the five-year maximum, with the outgoing auditor returning to a client's audit team after one or two years.[8] As such, these events are only nominal turnovers.

There are 961 mandatory rotations during our sample period, and we do not classify these mandatory events as unexpected turnovers in the first place because they again could be nominal and superficial (Chen, Lin, and Lin [2008]). [9] Moreover, these events can be anticipated and both departing and incoming auditors can prepare in advance (Lennox, Wu, and Zhang [2014]). [10] This filter leaves us with 1,689 turnovers.

[8] This pattern may explain why we only observe only 961 mandatory rotations since 2004.

[9] In interviews with several audit partners at Big 4 and non-Big 4 firms, they all indicate that audit firms typically have transition plans designed to meet the mandatory rotation requirement. In particular, incumbent audit partners near the five-year maximum often appoint another audit partner, to help them prepare to take over the case. Importantly, given that the incumbent audit partner is still in the audit firm, this partner often continues to be involved in the case. Thus, while nominally there is an auditor rotation, in effect the incumbent partner still has non-trivial input on the case. Furthermore, as indicated by Chen, Lin, and Lin [2008], mandatory rotations can be superficial as the original signing partner rotates off the client for only one or two years before taking it over again. We find that most of the mandatory rotations in our sample follow this pattern, which may explain why Chi et al. [2009] find no evidence of a change in audit quality following mandatory rotation.

[10] Lennox, Wu, and Zhang [2014] show that to avoid any deficiency that could be discovered by an incoming audit partner, the outgoing audit partner is more likely to initiate restatements in the last year of his/her tenure. They also find that a newly appointed audit partner is more likely to initiate restatements in the first year of his tenure. Taken together with the result that the outgoing partner is more likely to initiate restatements in the last year of his tenure, it is not clear whether there should be a significant difference in the likelihood of restatements surrounding mandatory auditor rotation. That is, there may be no change in audit quality surrounding mandatory auditor rotation, consistent with the finding in Chi et al. [2009]. Finally, using auditor rotations in the U.S., Laurion and Lawrence [2016] also find that the incoming auditors often require some changes to the financial statements that were not demanded by the outgoing audit partners.

Next, we omit an additional 787 auditor turnovers that are caused by the incumbent audit firm being dismissed by or resigning from their client. These events are *endogenous* in nature as they are triggered by changes in audit firm or client characteristics (Johnson and Lys [1990], Shu [2000]).

We exclusively focus on the 902 (or 12% of the initial 7,581) turnovers that involve a permanent disappearance of outgoing audit partners (322 partners). That is, turnovers in which the auditor stopped provide auditing services for public companies *permanently* following the departure. Of these, 160 turnovers (67 audit partners) involve outgoing audit partners who were 60 years old or older in the last year in which they provide auditing services. We label these turnovers as "normal retirements". We do not consider normal retirements as unexpected turnovers in the first place as audit firms can anticipate these retirements and prepare transition plans accordingly, which may prevent us from finding any personal impacts of individual auditors. [11] That said, as shown in section IV, including mandatory rotations and normal retirements in the sample of unexpected turnovers do not change our main findings.

For the remaining 742 turnovers, we conduct an extensive news search and interview anonymous audit firm staff to learn the reasons for the turnovers. There are 97 turnovers (36 auditors) for which we are unable to identify the reasons for the turnover; we exclude these turnovers from our analysis. We classify the remaining 645 auditor turnovers (219 auditors) as "unexpected" turnovers, which constitute our main sample.

Looking at our sample of unexpected turnovers, 105 turnovers (38 auditors) are precipitated by the sudden death or serious health problems of either the outgoing

[11] Based on interviews with several audit firms in Taiwan, we learned that they typically have a three-year transition plan for anticipated retirements. Thus, in these cases successor auditors are selected three years before the incumbent auditor's expected retirement.

partner or the outgoing partner's family. For this subsample, the average age of the outgoing partner is 48 (ranging from 40 to 60), and 80% are male.[12]

Another 445 turnovers (143 auditors) are triggered by the outgoing partner's resignation (137 auditors) or by a suspension of their CPA license by the government (6 auditors).[13] We find a bunch of outgoing partners start their own firms that only audit private firms, while some of them join public or private firms as senior managers in the same year or the year after their resignation.[14,] Moreover, we notice that approximately 24% of outgoing audit partners do not even maintain an active CPA license after resignation even though doing so is cheap (monthly membership fee is around USD$33). This suggests that these resigned auditors plan to stop doing attestation after resignation as CPA license is legally required for such services.[15]

We consider such resignations or suspensions as "unexpected" as they are not caused by changes in the audit firms or client characteristics. Moreover, these events are difficult to be anticipated by the client or the audit firm as audit firm employees are only required to notify the employer 30 days before their departure per the Taiwan Labor Law.[16] Interestingly, we find that these outgoing audit partners only sign the

[12] For example, we find an announcement on a personal blog that Mr. Ching-Chang Yang passed away on November 27, 2005 due to a heart attack, and Mr. Yang was a partner at KPMG Taiwan for three public firms in our sample. Similarly, Deloitte Taiwan announced on its company website that Mr. Yi-Feng Lin passed away due to cancer in November 2009, and he was responsible for auditing 32 public firms in our database.

[13] For example, two auditors at RSM Taiwan (a non-Big 4 audit firm) were permanently forbidden to provide audit services by the Taiwanese government in 2007 due to accounting scandals involving their former clients. We find that 2007 was the last year for the two auditors to appear in a public firm's audit report. In total, 6 auditors were suspended during our sample period. Our results are similar if we exclude these 6 auditors from the sample.

[14] For example, Mr. Tsung-Ming Chung, a former partner of Arthur Anderson (AA) Taiwan, resigned in 2001 to become chairman and CEO of Dynapack Corp. in the same year. Similarly, Ms. Shiou-Lien Lin, a former partner of Deloitte Taiwan, resigned from Deloitte in 2009 to join a small audit firm in the same year.

[15] In interviews with several audit firms, we learn that these auditors often resigned due to personal reasons such as divorce or immigration to foreign countries. Due to the Personal Data Privacy Act, these audit firms are not allowed to disclose specific details for each resignation.

[16] Article 15 in the Labor Standards Act states that "in the case of a specific fixed term contract for a term of more than three years, a worker may, upon completion of three years' work, terminate the contract by giving the employer an advance notice thirty days before he/her severance". In Taiwan, all audit firms are governed by the Labor Standards Act.

audit report for public firms for 5.1 years in the TEJ database before their resignation, and the average age at departure is 43 (ranging from 33 to 57). This is somewhat surprising given that on average in Taiwan it takes at least 10 years to become an audit partner and have the privilege of signing the audit report for public firms. Looking at the distribution of these unexpected turnovers by year, we find that each year there are around 10 audit partner resignations with no clustering in any single year.

Finally, there are 95 turnovers (38 auditors) in which the signing partner has audited the client for only one or two years. Interviews with several audit firms suggest that these auditors stop signing audit reports due to internal policy changes. Specifically, some audit firms such as Deloitte or PWC once allowed some of their senior audit managers to sign audit reports before acquiring partner status, and after a few years the managing partners decided to end this policy. We classify turnovers of this kind as unexpected because they are not triggered by changes in client or audit firm characteristics and are beyond individual partners' control.

In summary, our empirical tests include 645 unexpected auditor turnovers that are triggered by health issues including death (105), resignation or suspension of CPA license (445), or a change in their audit firms' internal policies (95). We provide a detailed decomposition of our sample auditor turnovers in Table 2.

IV. Empirical Analysis

Individual auditor fixed effects

Before turning to our main test, we first use the individual auditor fixed effects approach to see whether these fixed effects are significant in Taiwan, which would increase the generalizability of our data and facilitate comparison with prior studies. In particular, we follow Gul, Wu, and Yang [2013] and estimate the following equation:

$$Y_{it} = \delta_0 + \delta_1 ROA + \delta_2 Loss + \delta_3 Sales/Assets + \delta_4 Size + \delta_5 Growth + \delta_6 Lev + \delta_7 Age + \delta_8 HighTech + \delta_9 PSize_{AF} + \delta_{10} PSize_{IA} + \delta_{11} CI_{AF} + \delta_{12} CI_{IA} + \delta_{13} Tenure_{AF} + \delta_{14} Tenure_{IA} + \sum \eta_t Year_t + \sum \gamma_i Client_i + \sum \kappa_j AuditFirm_j + \sum \theta_n Auditor_n + \varepsilon_{it}, \quad (1)$$

where Y_{it} represents one of five audit quality measures: *Redca_Jones*, abnormal accruals estimated using the modified Jones model (Dechow, Sloan, and Sweeney [1995]); *Absacc_Jones*, the absolute value of *Redca_Jones*; *MAO*, which equals one if the client receives a modified opinion in the year and zero otherwise; *SP*, an indicator variable that equals one if the client's reported *ROA* (net income divided by average total assets) is between 0-1% and zero otherwise; and *Restate*, which equals one if the client's annual financial statement has been restated and zero otherwise. The control variables, defined in Appendix 1, include *ROA*, *Loss*, *Sales/Assets*, *Size*, *Growth*, *Lev*, *Age*, *HighTech*, $PSize_{AF}$, $PSize_{IA}$, CI_{AF}, CI_{IA}, $Tenure_{AF}$, $Tenure_{IA}$. Finally, $\sum_t Year_t$ is a set of year indicators, $\sum_i Client_i$ is a set of client indicators, $\sum_j AuditFirm_j$ is a set of audit firm indicators, and $\sum_n Auditor_n$ is a set of individual auditor indicator variables. This model has been used by prior studies to identify the impact of specific individuals (e.g., Graham, Li, and Qiu [2012]).

The regression estimate of equation (1) is presented in Panel A of Table 3. We find that the F-statistics and incremental adjusted R^2s associated with auditor fixed effects are statistically significant using all audit quality measures, consistent with Gul, Wu, and Yang [2013], which suggests that individual audit partners have a significant effect on audit quality in Taiwan.[17] Turning to the control variables, they are in line with the predicted signs whenever significant.

[17] We do not include fixed effects for branch audit offices as since it adds very little explanatory power. However, the results in Table 3 are similar if branch office indicators are included in the regression.

Next, we estimate equation (1) separately for audit partners at Big 4 and non-Big 4 firms to see whether there is any difference between the two groups. In Panel B of Table 3, we find that on average the F-statistics and incremental adjusted R^2s associated with auditor fixed effects are significantly larger for the non-Big 4 group. We also find that the percentage of significant individual fixed effects at the 5% level is relatively smaller for the Big 4 group based on all audit quality measures except *SP* and *Restate*. Taken together these findings seem suggest that individual auditors have a stronger association with audit quality when they are employed by non-Big 4 firms.

Finally, we manually collect demographic information such as education and gender for each individual audit partner from multiple sources including registration and personal information provided by the national CPA association of Taiwan (www.roccpa.org.tw), alumni lists and contact information provided by university alumni associations, internal magazines published by audit firms, and internet searches. We are able to collect such information for 611 individual audit partners, with 377 employed by Big 4 firms and the remaining 234 by non-Big 4 firms. We then extract the auditor fixed effects and use them as the dependent variable to see whether the coefficients are related to the demographic variables.[18] Similar to Gul, Wu, and Yang [2013], the results in Panel C of Table 3 show that auditors' personal characteristics together have relatively low explanatory power for coefficients on auditor fixed effects, as evident by the very small adjusted R^2 in each column.[19]

[18] Prior studies examine various characteristics of individual auditors, including auditor tenure (Myers, Myers, and Omer [2003]), busyness (Goodwin and Wu [2014]), industry knowledge (Bedard and Biggs [1991], Krishnan [2003]), gender (Gold, Hunton, and Gomaa [2009], Hardies, Breesch, and Branson [2010]), and experiences (Chi et al. [2016]).

[19] Endogeneity is not the only issue that may arise from using auditor fixed effects to investigate the association between individual auditors and audit quality. Wooldridge [2002] indicates that using F-statistics to test the joint significance of a large number of indicator variables could be problematic when there is no solid assumption about the error terms of these indicator variables. To test this, we randomly allocate pseudo-clients to individual auditors even though they do not really audit these firms and repeat the analysis of equation (1). That is, assuming that there is an audit partner X who audits companies A and B, we assign companies C and D to auditor X conditional on X never actually auditing

Changes in Audit Quality Surrounding "Unexpected" Audit Turnovers

In this section we turn to our main analysis, where we examine audit quality surrounding unexpected auditor turnovers using the same audit quality measures as described in equation (1) for the 645 unexpected auditor turnover events in our sample. Importantly, to examine whether there are *abnormal* changes in audit quality surrounding these events, we need a benchmark for normal audit quality changes. Thus, for each treatment firm we identify a control firm using propensity score matching. For example, assuming that one of company A's signing auditors unexpectedly departed in year *t*, we choose a control firm without auditor turnover in year *t* based on industry membership, firm size, profitability, and leverage using a caliper of 0.05 and a common support range of 0.1 to 0.9 (Caliendo and Kopeinig [2008]). We are able to form a sample of 417 unexpected turnovers and 417 matched control firms with the lowest propensity score, where changes in audit quality surrounding the pseudo-event year for control firms are considered normal changes in audit quality.

The results are provided in Table 4, Panel A. We find that relative to control firms, firms with unexpected turnovers do not experience abnormal changes in audit quality, as the differences between the two groups are not statistically different from zero.

Next, we estimate equations (2) and (3) as described below for continuous and dichotomous audit quality measures, respectively, to see whether there are abnormal

C and D during the sample period in TEJ. We perform this random assignment 100 times and record the F-statistic and adjusted R^2 for each round. Interestingly, we find the F-statistics to be similar to those reported in Table 3, Panel A. For example, when the dependent variable is the level of absolute discretionary accruals used to estimate equation (1), the median F-statistic is 1.61 and the median adjusted R^2 increases 1.44% after 100 repetitions of random auditor-client assignments. These numbers are very close to those using actual auditor-client assignments. This result confirms the finding in Fee, Hadlock, and Pierce [2013] that a significant F-statistic could simply represent a false statistical association between indicator variables and the variables of interest.

changes in audit quality surrounding unexpected auditor turnovers relative to those of control firms:

$$\Delta Redca\_Jones_{t-1,\,t+1}\ (\Delta Absacc\_Jones_{t-1,\,t+1}) = \alpha_0 + \alpha_1 AuditorTurnover + \alpha_2 \Delta ROA_{t-1,\,t+1} + \alpha_3 \Delta Loss_{t-1,\,t+1} + \alpha_4 \Delta Sales/Assets_{t-1,\,t+1} + \alpha_5 \Delta Size_{t-1,\,t+1} + \alpha_6 \Delta Growth_{t-1,\,t+1} + \alpha_7 \Delta Lev_{t-1,\,t+1} + \alpha_8 Redca\_Jones_{t-1}\ (Absacc\_Jones_{t-1}) + \varepsilon_t, \quad (2)$$

where $\Delta Redca\_Jones_{t-1,\,t+1}$ denotes the change in discretionary accruals (*Redca_Jones*) from time *t-1* to *t+1*, where year *t* is the last year in which the incumbent audit partner audits the given client, $\Delta Absacc\_Jones_{t-1,\,t+1}$ denotes the absolute value of change in discretionary accruals (*Redca_Jones*) from time *t-1* to *t+1*, and *AuditorTurnover* equals one if the company is in the treatment group that experiences an audit partner turnover and zero otherwise for the control firm. $Redca\_Jones_{t-1}$ represents discretionary accruals at time *t-1*. $Absacc\_Jones_{t-1}$ denotes the absolute value of $Redca\_Jones_{t-1}$. For the other control variables, they represent changes from year *t-1* to year *t+1* in the given variable, and are defined in Appendix 1.

$$\Delta MAO_{t-1,\,t+1}\ (\Delta SP_{t-1,\,t+1}, \Delta Restate_{t-1,\,t+1}) = \beta_0 + \beta_1 AuditorTurnover + \beta_2 \Delta ROA_{t-1,\,t+1} + \beta_3 \Delta Loss_{t-1,\,t+1} + \beta_4 \Delta Sales/Assets_{t-1,\,t+1} + \beta_5 \Delta Size_{t-1,\,t+1} + \beta_6 \Delta Growth_{t-1,\,t+1} + \beta_7 \Delta Lev_{t-1,\,t+1} + \beta_8 MAO_{t-1}\ (SP_{t-1}, Restate_{t-1}) + \varepsilon_t, \quad (3)$$

where *MAO* equals one if the client receives a modified opinion and zero otherwise. *SP* equals one if the return on assets of the client is between 0% and 1% and zero otherwise. *Restate* equals one if the client restates their financial statement and zero otherwise. And we define $\Delta MAO_{t-1,\,t+1}\ (\Delta SP_{t-1,\,t+1}, \Delta Restate_{t-1,\,t+1})$ as one if the company experiences any change in *MAO* (*SP*, or *Restate*) (either from zero to one or vice versa from time *t-1* to *t+1*) as we do not have prediction on the direction of audit quality changes surrounding

auditor turnovers. *AuditorTurnover*$_{i,t}$ equals one if the company is in the treatment group that experiences an audit partner turnover and zero otherwise for the control firm. The control variables are defined in Appendix 1.

To examine whether unexpected auditor turnovers lead to different changes in audit quality across Big 4 and non-Big 4 audit firms, we also add interaction terms between *AuditorTurnover* and *Big 4* (*Big_N*AuditorTurnover*) to equations (2) and (3), respectively. The regression estimates for equation (2) are presented in Table 4, Panel B. We find that when using discretionary accruals (Δ*Redca_Jones*) as the dependent variable, the coefficient on *AuditorTurnover* is negative and is marginally significant at the 10% level, while the coefficient on *Big_N*AuditorTurnover* is significantly positive (0.045, p=0.078). Moreover, the sum of *AuditorTurnover* and *Big_N*AuditorTurnover* is insignificantly different from zero. These results indicate that firms with non-Big 4 auditors experience a reduction in discretionary accruals subsequent to unexpected turnovers, whereas firms with Big 4 auditors do not. However, we do not observe any significant change surrounding unexpected auditor turnovers when absolute discretionary accruals are considered.

Table 4, Panel B also presents regression estimates of equation (3). Both *AuditorTurnover* and *Big_N*AuditorTurnover* are insignificant in columns (4) to (6), suggesting no significant change in the likelihood of *MAO*, *SP*, and *Restate* surrounding auditor turnovers.

In short, the results again suggest that on average unexpected auditor turnovers in Big 4 firms do not trigger abnormal changes in audit quality while we find some evidence that those in non-Big 4 firms do.

In Panel B, we adopt a matched sample design to alleviate the differences across firms with unexpected auditor turnovers and those without such events. Next, we verify

the robustness of our results by using an unmatched design – that is, all firms without any form of auditor turnovers serve as the control sample. The results in Panel C of Table 4 indicate that our findings remain unaffected. Simply put, firms with non-Big auditors experience some changes in discretionary accruals, whereas those with Big 4 auditors do not. However, for the other audit quality measures, unexpected auditor turnovers do not trigger any significant change. Again, the results suggest individual auditors to have limited influence over audit quality.

Audit Quality Changes Surrounding Unexpected Auditor Turnovers – Auditor Turnovers Triggered by Death or Health Issues

Among our sample of unexpected turnovers, 105 (involving 38 auditors) are precipitated by the death or health issues of the auditor or a member of the auditor's family, which could arguably have the most surprising effect on audit quality. To test this conjecture, we repeat the above analysis using this subset of turnovers. We are able to form a sample of 91 unexpected turnovers due to a death and 91 matched control firms using the propensity score matching process described earlier (90 pairs when discretionary accruals are the dependent variable). The results are presented in Panel D of Table 4. In general, the signs on the coefficients are qualitatively similar to those using the entire sample of unexpected turnovers. In particular, results for coefficients of *AuditorTurnover* with ΔMAO and ΔSP as dependent variables indicate that audit quality changes surrounding auditor turnovers for non-Big 4 auditors, and the coefficients of *Big_N*AuditorTurnover* for those two regressions are significant with opposite signs. These results suggest that the unexpected death of incumbent audit partners or their family members does trigger some significant changes in audit quality for non-Big 4 auditors, but not for Big 4 auditors.

Unexpected Auditor Turnovers include mandatory rotation and natural retirements

Up to now, we do not consider mandatory rotation and natural retirements as unexpected turnovers in that these events can be anticipated by the audit firm (or even by the client). For example, the outgoing audit partners may clean up uncorrected errors before handing over the client to the successors. However, this type of turnovers is not driven by changes in client characteristics, so econometrically they can be considered as exogenous. To confirm the robustness of our results, we then re-estimate equations (2) and (3) by including mandatory retirements and mandatory rotations as unexpected auditor turnovers. We present this analysis in in Panel E of Table 4. In short, our main findings are qualitatively similar to those shown in Panel B of Table 4. Specifically, for all audit quality measures, we do not observe any significant changes for Big 4 and non-Big 4 auditors surrounding unexpected turnovers.

The Selection of Successor Auditor during Unexpected Turnovers

Results up to now have shown that unexpected auditor turnovers do not trigger significant audit quality changes, in particular for Big 4 firms, which seems to suggest that individual auditors do not exhibit a significant impact on audit quality in large audit firms. However, it is also likely that audit firms intentionally select a successor with similar personal traits as the outgoing auditor to maintain stable audit quality In particular, with more audit partners in-house as shown in Table 1, Big 4 firms are more likely to find a successor audit partner with similar characteristics as the outgoing partner even when the turnover event is unexpected. In contrast, with fewer auditors, non-Big 4 firms are less likely to be able to select a successor with similar characteristics as the departing audit partner. If this is the case, we are likely to see greater (smaller) differences in personal characteristics between outgoing and incoming

audit partners in non-Big 4 (Big 4) firms, which in turn explain why we observe more (less) pronounced changes in audit quality surrounding unexpected auditor turnovers in non-Big 4 (Big 4) firms. To address this concern, we explore the differences in personal characteristics between outgoing and successor audit partners across Big 4 and non-Big 4 firms.

Based on the demographic information we collect, we find that while both Big 4 and non-Big 4 firms appoint an incoming audit partner with different personal characteristics from the outgoing auditor partner, the differences are actually greater for Big 4 firms relative to non-Big 4 firms. Specifically, as shown in Panel A of Table 5, we find that on average the successor audit partner is 7.9 (7.0 for median) years younger than the outgoing partner in Big 4 firms, and the difference is significant at 1% level. In contrast, the successor auditor has a similar age as the outgoing partner in non-Big 4 firms. Relatedly, the successor auditor is then less experienced as a signing partner relative to the outgoing partner in Big 4 firms, and again the difference is not observed in non-Big 4 firms. Next, while non-Big 4 firms are more likely to assign a successor auditor with a different gender from the outgoing partner than Big 4, the difference is not statistically significant. Interestingly, we find that while being younger and less experienced, the incoming auditor has 3.3 more clients in Big 4 firms than the predecessor, but again this difference does not happen in non-Big 4 firms. Finally, non-Big 4 firms are more likely to appoint successor auditors (57%) who have audited a client in the same industry before being assigned this new client than Big 4 (43%), but the difference is not significant across the two groups.[20]

[20] The total number of outgoing and incoming audit partners used to compute *ΔAge*, *ΔGender*, *ΔNumClient*, *ΔExperience*, *ΔAccUnder*, and *IndExp* is 382, 395, 410, 410, 75, and 408, respectively. The reason that we have fewer observations for *ΔAccUnder* is that we only obtain information on education background for only 40% of signing audit partners in our sample, and we require such information for both departing and incoming audit partners to compute the differences.

Taken together, the results in Panel A of Table 5 suggest that when facing unexpected auditor turnovers, both Big 4 and non-Big 4 firms appoint successor auditors with different personal characteristics from the departing auditors, whereas the differences are more pronounced for Big 4. This supports the notion that in non-Big 4 firms, due to less rigorous internal controls, an auditor is more likely to reflect his/her personal style upon audit engagements. In contrast, with complete internal controls and standardized audit procedures, Big 4 firms are able to maintain more stable audit quality during unexpected auditor turnovers even though the successor auditors have very different personal characteristics from the departing auditors.

Additional Analyses

The results up to now suggest that non-Big 4 auditors are more likely than their counterparts in Big 4 to exhibit personal influences on audit quality. While this suggests that individual auditors' personal influences are muted by control mechanisms at Big 4, it is likely that non-Big 4 auditors have more "chances" of exhibiting personal influences. For example, it is likely that the outgoing auditors at non-Big 4 leave more uncorrected errors for their successors to correct due to lower audit quality.[21]

While the matching design helps alleviate such concerns, we examine the robustness of our findings by ensuring that the two groups of auditors have similar chances to exhibit personal influences. Specifically, we focus on auditor turnovers with greater discretionary accruals left behind for incoming auditors to clean up. That is, we sort out all unexpected auditor turnovers with Big 4 auditors and keep the quartile with the largest amount of discretionary accruals (because the proportion of auditor turnovers at Big 4 versus non-Big 4 is 4 to 1 in our sample). Within this sample, the mean of client

[21] Typically, outgoing audit partners have incentives to clean up previously uncorrected errors before handing over the client to the succeeding auditors (Ke, Lennox, and Xin [2015]). However, in our setting, the incumbent auditors depart due to unexpected events, so they do not have time to clean up errors.

absolute discretionary accruals is 0.227 (0.101) for Big 4 (non-Big 4) auditors, which allows more discretionary accruals for the incoming auditors at Big 4 to clean up than those at non-Big 4.

As shown in in Panel B of Table 5, our main findings still hold with this sample. In short, we do not observe any significant change for the five measures. This again suggests that Big 4 auditors do not have significant influence over audit quality even when they have more chances to exhibit personal styles.

Next, as shown in Panel A of Table 5, the incoming auditors at Big 4 take over more clients than their counterparts at non-Big 4, so the lack of significant changes in audit quality surrounding unexpected auditor turnovers at Big 4 could be driven by the different busyness across the two groups. To examine whether this is true, we keep incoming Big 4 auditors with similar number of clients as non-Big 4 auditors and repeat the same analysis. The results in Panel C of Table 5 are qualitatively similar with those documented in Panel B of Table 4. Namely, after controlling for busyness, we do not observe any significant changes surrounding unexpected turnovers for both Big 4 and non-Big 4 auditors. As such, the results indicate that the lack of significant influence over audit quality by Big 4 auditor is not driven by their larger client portfolio.

V. Conclusion

In this study, we investigate changes in audit quality surrounding exogenous auditor turnovers in Taiwan precipitated by the incumbent audit partner's resignation due to health issues, sudden death, or career change to examine whether individual auditors causally affect audit quality. While prior studies attempt to examine this question, in addition to methodological issues, their findings are subject to alternative explanations such as endogenous auditor-client assignments. For example, individual

auditors may only accept clients with certain characteristics, which would lead to a significant association between individual auditors and *ex post* audit quality measures. By focusing on auditor turnovers that are not triggered by changes in client or audit firm characteristics, we are able to cleanly investigate the causal effects that individual auditors may have on audit quality.

We find that on average unexpected turnovers are not associated with abnormal changes in audit quality if the auditors are from Big 4 audit firms. In contrast, we find some evidence that audit quality changes subsequent to unexpected auditor turnovers for clients with non-Big 4 auditors, while this finding is not consistently present in all scenarios. Interestingly, we also find that relative to non-Big 4 firms, Big 4 firms are more likely to appoint a successor audit partner with very different personal characteristics from the outgoing audit partner. These findings are consistent with the view that while they observe more dramatic changes in audit partners' personal characteristics, large audit firms' standardized audit procedures and internal controls constrain individual auditors from exerting personal judgment in audit engagements, whereas smaller audit firms allow for more personal discretion. As such, despite having different personal characteristics, whether individual auditors are able to exert an effect on audit quality seems to be driven by the infrastructure of the audit firm.

To summarize, our study suggests that on average individual auditors in Taiwan do not exhibit a significant personal effect on audit quality, particularly when they work for Big 4 audit firms. As Taiwan's audit market is very similar to that of countries such as the U.S., Canada, or Australia, with Big 4 auditors accounting for 80% of public firm auditing, our findings have important implications for other countries. Specifically, as many countries are starting to mandate identification of signing audit partner(s) in the audit report, in an effort to hold individual auditors accountable for audit outcomes, our

study suggests that whether this disclosure can improve overall audit quality is open to debate, in particular for Big 4 audit firms.

APPENDIX 1

Variable Definitions

Variables		Description
Redca_Jones	=	abnormal accruals estimated based on modified Jones model (Dechow, Sloan, and Sweeney [1995]).
Absacc_Jones	=	the absolute value of *Redca_Jones.*
MAO	=	one if the client receives a modified opinion and zero otherwise.
SP	=	one if the return on assets of the client is between 0% and 1% and zero otherwise.
Restate	=	one if the client restates their financial statement and zero otherwise.
ROA	=	net income divided by average total assets of the client.
Loss	=	one if net income < 0 of the client, and zero otherwise.
Sales/Assets	=	total sales divided by average total assets of the client.
Size	=	natural logarithm of total assets of the client (in thousands of NT dollars) .
Growth	=	growth rate in sales of the client.
Lev	=	the liabilities divided by the total assets of the client.
Age	=	number of years a client company has been founded.
HighTech	=	one if the firm belongs to a high-tech industry, and zero otherwise.
$PSize_{AF}$	=	the public client portfolio size of the audit firm, measured as sum of natural logarithm of the total assets of all public clients audited by the audit firm in a particular year.
$PSize_{IA}1(2)$	=	the public client portfolio size of an individual auditor, measured as sum of natural logarithm of the total assets of all public clients audited by the first (second) signing auditors in a particular year.
CI_{AF}	=	client importance at the audit firm level, measured as client size (natural logarithm of the total assets) divided by $PSize_{AF,}$, which is defined earlier.
$CI_{IA}1(2)$	=	client importance for the first (second) signing auditor, measured as client size (natural logarithm of the total assets) divided by $PSize_{IA}1(2)$, which is defined earlier.
$Tenure_{AF}$	=	the number of years that the audit firm has audited the client.
$Tenure_{IA}1(2)$	=	the number of years that the first (second) signing auditors have signed the client's annual audit report.
Big_N	=	one if the auditor of the firm belongs to one of the Big 4 (to 6) CPA firms, and zero otherwise.
Tenure	=	the mean of number of continuous years the signing partner has audited the client.
NumClient	=	the mean of number of clients the signing partner audits.
Sanction	=	one if the signing partner has experienced regulatory sanctions, and zero otherwise.
Ind_Mkt	=	mean of signing partner industry market share.
Ind_Port	=	mean of signing partner portfolio concentration in a particular industry.

APPENDIX 1 (continued)

Variables		Description
Gender	=	one if the signing partner is male, and zero otherwise.
BirthYear	=	the year when the signing auditor was born.
AccUnder	=	one if the signing partner majored in accounting during the college education, and zero otherwise.
UnderDummy	=	one if the undergraduate educational background is available about the signing partner, and zero otherwise.
Master	=	one if the signing partner has obtained a master's degree, and zero otherwise.
MasterDummy	=	one if the master educational background is available about the signing partner, and zero otherwise.
AuditorTurnover	=	one if the company is in the treatment group that experiences an audit partner turnover, and zero otherwise for control firm.

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TABLE 1

Descriptive Statistics for Audit Firms, Branch Offices, Individual Auditors, and Variables Used in Estimating Individual Auditor Effects

Panel A: Full Sample

	Mean	Lower Quartile	Median	Upper Quartile	Std. Dev.
(1)Number of audit firms per year	37.500	31.500	40.000	42.000	5.489
(2)Number of branch offices per audit firm	1.471	0.000	1.000	2.000	1.631
(3) Number of clients per audit firm	34.417	2.000	4.000	12.000	87.458
(4) Number of signing auditors per audit firm	15.095	2.000	4.000	9.000	31.472
(5) Number of unique clients per signing auditor used to estimate fixed effects	18.291	4.000	11.000	29.000	18.789

Panel B: Big 4 Sample

	Mean	Lower Quartile	Median	Upper Quartile	Std. Dev.
(1) Number of audit firms per year	4.813	4.000	5.000	5.000	0.750
(2) Number of branch offices per audit firm	4.375	4.000	4.000	5.000	0.518
(3) Number of clients per audit firm	227.740	145.000	213.000	285.000	128.447
(4) Number of signing auditors per audit firm	82.688	52.000	72.000	95.000	48.692
(5) Number of unique clients per signing auditor used to estimate fixed effects	25.768	10.000	23.000	38.000	19.947

Panel C: Non-Big 4 Sample

	Mean	Lower Quartile	Median	Upper Quartile	Std. Dev.
(1) Number of audit firms per year	32.875	27.000	36.000	38.000	5.898
(2) Number of branch offices per audit firm	1.188	0.000	1.000	2.000	1.390
(3) Number of clients per audit firm	5.920	2.000	3.000	7.000	7.034
(4) Number of signing auditors per audit firm	5.125	2.000	4.000	7.000	4.267
(5) Number of unique clients per signing auditor used to estimate fixed effects	5.840	2.000	4.000	8.000	5.983

TABLE 1 (continued)

Panel D: Descriptive Statistics for Variables Used in Estimating Individual Auditor Effects

	N	Mean	Median	Std. Dev.	Lower Quartile	Upper Quartile	Max.	Min.
Redca_Jones	19,696	-0.022	-0.003	0.172	-0.059	0.049	1.000	-1.000
Absacc_Jones	19,696	0.093	0.054	0.146	0.024	0.104	1.000	0.000
MAO	20,657	0.081	0.000	0.273	0.000	0.000	1.000	0.000
SP	20,657	0.062	0.000	0.242	0.000	0.000	1.000	0.000
Restate	20,657	0.035	0.000	0.183	0.000	0.000	1.000	0.000
ROA	20,657	0.036	0.044	0.101	0.004	0.090	0.237	-0.342
Loss	20,657	0.223	0.000	0.416	0.000	0.000	1.000	0.000
Sales/Assets	20,657	0.461	0.382	0.337	0.240	0.582	2.000	0.000
Size	20,657	14.736	14.599	1.346	13.763	15.580	18.111	11.517
Growth	20,657	0.244	0.086	0.733	-0.069	0.306	4.568	-0.570
Lev	20,657	0.403	0.393	0.183	0.266	0.520	0.918	0.075
Age	20,657	20.445	18.000	12.002	11.000	28.000	49.000	1.000
HighTech	20,657	0.637	1.000	0.481	0.000	1.000	1.000	0.000
$PSize_{AF}$	20,657	22.020	22.745	2.062	21.660	23.270	24.087	12.006
$PSize_{IA}1$	20,657	18.281	18.350	1.565	17.350	19.313	23.011	10.387
$PSize_{IA}2$	20,657	18.689	18.678	1.494	17.747	19.610	23.336	12.002
CI_{AF}	20,657	2.468	0.320	9.697	0.170	0.590	100.000	0.000
$CI_{IA}1$	20,657	11.454	7.650	15.912	4.280	12.730	100.000	0.000
$CI_{IA}2$	20,657	8.364	5.470	11.058	3.870	8.220	100.000	0.880
$Tenure_{AF}$	20,657	8.844	8.000	5.751	4.000	12.000	29.000	1.000
$Tenure_{IA}1$	20,657	5.255	4.000	3.688	2.000	7.000	24.000	1.000
$Tenure_{IA}2$	20,657	4.319	3.000	3.508	2.000	6.000	24.000	0.000
Big_N	20,657	0.849	1.000	0.358	1.000	1.000	1.000	0.000

Please refer to Appendix 1 for variable definitions.
The sample period is from 1995–2011.

TABLE 2

Descriptive Statistics for Auditor Turnovers

(1) 7,581 auditor turnovers during 1995 – 2011 period	
Voluntary reassignments within audit firms	4,931
Mandatory five-year rotations	961
Auditors resign from clients or being dismissed by clients	787
Turnovers with outgoing audit partners stop auditing service permanently	902
	7,581
(2) 902 turnovers with outgoing audit partners stop auditing service permanently	
Unknown reasons (excluded from the analysis)	97
Retirements at 60 years-old or above	160
Sudden deaths or serious health problems[a]	105
Auditors resign and start the new job in the same year or one year later[b]	445
Stop auditing service due to audit firms' internal policies[c]	95
	902
(3) Total unexpected turnovers: a + b + c	645

TABLE 3
Estimating Individual Auditor Fixed Effects

Panel A: Full Sample

	Redca_Jones		*Absacc_Jones*		*MAO*		*SP*		*Restate*	
	coeff.	**p-value**	**coeff.**	**p-value**	**coeff.**	**p-value**	**coeff.**	**p-value**	**coeff.**	**p-value**
ROA	0.644	0.000	-0.273	0.000	-0.282	0.000	-0.867	0.000	-0.088	0.000
Loss	0.005	0.111	-0.008	0.001	-0.001	0.901	-0.294	0.000	0.006	0.189
Sales/Assets	-0.115	0.000	0.039	0.000	0.015	0.205	-0.097	0.000	0.013	0.134
Size	-0.005	0.015	-0.009	0.000	-0.050	0.000	0.004	0.297	0.005	0.115
Growth	0.007	0.000	0.003	0.001	-0.005	0.057	0.001	0.666	-0.000	0.945
Lev	0.079	0.000	0.019	0.005	0.340	0.000	0.032	0.060	0.089	0.000
Age	0.001	0.062	-0.003	0.015	-0.001	0.704	0.010	0.002	0.007	0.003
HighTech	-0.143	0.569	-0.094	0.622	-0.028	0.832	0.367	1.000	0.087	1.000
$PSize_{AF}$	0.000	0.869	-0.005	0.024	0.023	0.000	-0.006	0.303	0.010	0.017
$PSize_{IA}1$	0.000	0.857	-0.000	0.748	-0.006	0.122	0.000	0.992	-0.005	0.071
$PSize_{IA}2$	-0.001	0.442	0.001	0.299	0.010	0.024	0.002	0.546	0.006	0.049
CI_{AF}	0.000	0.013	0.000	0.104	0.000	0.741	0.000	0.719	-0.001	0.000
$CI_{IA}1$	-0.000	0.128	0.000	0.498	0.000	0.969	0.000	0.660	0.000	0.095
$CI_{IA}2$	0.000	0.705	0.000	0.865	-0.001	0.095	-0.000	0.808	-0.000	0.370
$Tenure_{AF}$	-0.000	0.309	0.000	0.408	-0.005	0.000	0.000	0.986	-0.000	0.552
$Tenure_{IA}1$	-0.001	0.239	-0.000	0.701	0.005	0.019	-0.006	0.004	0.001	0.540
$Tenure_{IA}2$	0.000	0.491	-0.000	0.743	-0.005	0.041	0.009	0.000	-0.002	0.255
Year, client firm, audit firm, and individual auditor indicators	included		included		Included		included		included	
Adj R^2	55.99%		65.44%		36.34%		16.80%		21.26%	
Sample size	19,696		19,696		20,657		20,657		20,657	

Testing the significance of client firm fixed effects					
F-statistics (p-value)	10.58(0.000)	16.33(0.000)	4.88(0.000)	2.12(0.000)	3.30(0.000)
ΔR^2_{CF}	42.87%	53.89%	16.26%	5.40%	10.25%
$\%\Delta R^2_{CF}$	326.50%	66.58%	80.98%	45.76%	93.10%
Testing the significance of audit firm fixed effects					
F-statistics (p-value)	1.07(0.326)	1.13(0.227)	3.37(0.000)	1.40(0.024)	2.33(0.000)
ΔR^2_{AF}	-0.01%	0.01%	0.24%	-0.03%	0.07%
$\%\Delta R^2_{AF}$	-0.02%	0.02%	0.66%	-0.18%	0.33%
Testing the significance of individual auditor fixed effects					
F-statistics (p-value)	1.32(0.000)	1.63(0.000)	2.03(0.000)	1.25(0.000)	1.95(0.000)
ΔR^2_{IA}	0.89%	1.41%	3.98%	1.25%	4.68%
$\%\Delta R^2_{IA}$	1.62%	2.20%	12.30%	8.04%	28.23%

TABLE 3 (continued)

Panel B: Big 4 versus Non-Big 4 Firms

	Redca_Jones		*Absacc_Jones*		*MAO*		*SP*		*Restate*	
	Big 4	**Non-Big 4**	**Big 4**	**Non-Big 4**	**Big 4**	**Non-Big 4**	**Big 4**	**Non-Big 4**	**Big 4**	**Non-Big 4**
Testing the significance of client firm fixed effects										
F-statistics	10.31	8.26	16.48	10.02	3.49	3.21	1.62	1.54	2.34	2.30
(p-value)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
ΔR^2_{CF}	43.28%	44.24%	55.44%	49.06%	18.16%	13.61%	5.58%	5.97%	11.80%	11.85%
$\%\Delta R^2_{CF}$	341.32%	302.81%	22.03%	336.26%	127.35%	32.37%	49.21%	49.67%	183.23%	55.45%
Testing the significance of audit firm fixed effects										
F-statistics	1.31	1.37	1.99	1.29	2.26	3.70	1.15	0.66	4.97	2.54
(p-value)	(0.249)	(0.049)	(0.064)	(0.088)	(0.027)	(0.000)	(0.327)	(0.968)	(0.000)	(0.000)
ΔR^2_{AF}	0.00%	-0.09%	0.02%	0.08%	0.04%	0.75%	-0.01%	0.01%	0.05%	0.34%
$\%\Delta R^2_{AF}$	0.00%	-0.15%	0.03%	0.13%	0.12%	1.37%	-0.06%	0.06%	0.27%	1.03%
Testing the significance of individual auditor fixed effects										
F-statistics	1.10	1.47	1.29	1.68	1.78	1.91	1.21	1.24	1.73	1.90
(p-value)	(0.025)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.003)	(0.000)	(0.000)
ΔR^2_{IA}	0.25%	2.36%	0.54%	2.89%	2.72%	4.30%	0.91%	3.15%	3.09%	5.30%
$\%\Delta R^2_{IA}$	0.45%	4.18%	0.82%	4.76%	9.16%	8.37%	5.68%	21.01%	20.40%	18.98%
% of significant auditor fixed effects	1.89%	6.33%	7.26%	10.20%	6.84%	9.43%	26.42%	9.94%	40.57%	14.46%
Adj R^2	55.72%	58.85%	66.06%	63.65%	32.42%	51.59%	16.92%	49.75%	18.24%	33.22%
Sample size	16,704	2,992	16,704	2,992	17,542	3,115	17,542	3,115	17,542	3,115

TABLE 3 (continued)

Panel C: The Association between Individual Auditor Fixed Effects and Auditor Demographic Characteristics (Dependent Variables: Coefficients on Individual Auditor Fixed Effects)

	Redca_Jones		*Absacc_Jones*		*MAO*		*SP*		*Restate*	
	coeff.	**p-value**	**coeff.**	**p-value**	**coeff.**	**p-value**	**coeff.**	**p-value**	**coeff.**	**p-value**
Tenure	0.000	0.998	0.008	0.019	-0.010	0.294	0.038	0.002	0.003	0.728
NumClient	-0.001	0.694	0.000	0.779	-0.002	0.637	0.009	0.111	0.003	0.348
Sanction	0.308	0.399	-0.326	0.362	0.087	0.931	-0.143	0.908	1.218	0.191
Ind_Mkt	-0.008	0.045	0.007	0.055	0.000	0.979	-0.010	0.493	-0.002	0.870
Ind_Port	0.001	0.128	0.000	0.541	0.001	0.326	0.001	0.527	0.002	0.083
Gender	0.009	0.463	-0.005	0.705	-0.051	0.141	-0.023	0.632	-0.034	0.285
BirthYear	0.001	0.356	0.000	0.582	-0.001	0.547	0.001	0.654	-0.004	0.059
AccUnder	0.011	0.617	0.006	0.791	0.124	0.033	-0.124	0.127	0.017	0.746
UnderDummy	-0.004	0.868	0.014	0.512	0.146	0.014	-0.152	0.067	0.009	0.862
Master	-0.034	0.088	-0.016	0.404	0.035	0.520	-0.092	0.217	0.017	0.735
MasterDummy	-0.039	0.031	-0.010	0.582	-0.018	0.712	-0.112	0.095	-0.025	0.572
Big_N	0.046	0.001	-0.059	0.000	0.086	0.030	0.002	0.978	-0.015	0.675
N	609		609		611		611		611	
Adj_R^2(%)	1.62		3.39		1.27		2.35		0.59	

Please refer to Appendix 1 for variable definitions.

The control variables in Panel B are the same as those in Panel A.

The dependent variables in Panel C are the coefficients on the individual auditor fixed effects obtained from Panel A.

The sample period is from 1995–2011.

TABLE 4

Changes in Audit Quality Surrounding Unexpected Auditor Turnovers

Panel A: Descriptive Statistics

		Mean		
	N	**Unexpected turnovers**	**control**	**p-value (t-test)**
Δ*Redca_Jones*	814	-0.024	-0.011	0.29
Δ*Absacc_Jones*	814	0.113	0.107	0.52
Δ*MAO*	834	0.082	0.072	0.60
Δ*SP*	834	0.110	0.132	0.34
Δ*Restate*	834	0.062	0.058	0.77

Panel B: Unexpected Auditor Turnovers and Changes in Audit Quality (Relative to a Matched Control Sample without Auditor Turnovers)

	Δ*Redca_Jones*		**Δ*Absacc_Jones***		**Δ*MAO***		**Δ*SP***		**Δ*Restate***	
	coeff.	**p-value**	**coeff.**	**p-value**	**coeff.**	**p-value**	**coeff.**	**p-value**	**coeff.**	**p-value**
AuditorTurnover	-0.038	0.100	0.004	0.873	0.133	0.851	0.013	0.985	-0.847	0.188
Big_N AuditorTurnover*	0.045	0.078	0.005	0.837	0.085	0.911	-0.120	0.873	0.844	0.280
Big_N	-0.023	0.233	-0.004	0.817	-0.003	0.996	0.353	0.543	-1.128	0.065
Δ*ROA*	0.518	0.000	-0.078	0.445	-0.892	0.642	-9.258	0.000	-1.890	0.555
Δ*Loss*	0.005	0.719	-0.014	0.225	0.152	0.672	-2.511	0.000	0.040	0.916
Δ*Sales/Assets*	-0.114	0.004	-0.055	0.200	-0.121	0.883	-0.011	0.991	1.352	0.318
Δ*Size*	0.017	0.350	-0.048	0.004	0.596	0.085	-0.332	0.289	-0.401	0.542
Δ*Growth*	0.021	0.005	-0.009	0.187	-0.152	0.315	0.149	0.540	0.100	0.721
Δ*Lev*	0.030	0.624	0.119	0.064	-0.166	0.901	-3.088	0.011	-0.007	0.998
$Redca\_Jones_{t-1}$ ($Absacc\_Jones_{t-1}$, MAO_{t-1}, SP_{t-1}, $Restate_{t-1}$)	-0.466	0.000	0.323	0.003	2.954	0.000	6.477	0.000	5.007	0.000
N	814		814		834		834		834	
R^2 (Pseudo R^2) (%)	37.69		18.16		16.66		38.52		36.17	

Panel C: Unexpected Auditor Turnovers and Changes in Audit Quality (Relative to All Firms without Auditor Turnovers)

	ΔRedca_Jones		***ΔAbsacc_Jones***		***ΔMAO***		***ΔSP***		***ΔRestate***	
	coeff.	**p-value**	**coeff.**	**p-value**	**coeff.**	**p-value**	**coeff.**	**p-value**	**coeff.**	**p-value**
AuditorTurnover	-0.022	0.076	-0.009	0.507	0.457	0.188	0.075	0.817	0.259	0.557
Big_N AuditorTurnover*	0.024	0.094	0.015	0.295	-0.397	0.315	0.042	0.912	-0.587	0.267
Big_N	-0.009	0.028	-0.009	0.021	0.218	0.050	-0.010	0.925	-0.434	0.002
ΔROA	0.557	0.000	-0.055	0.176	-2.425	0.000	-5.584	0.000	-1.261	0.139
ΔLoss	0.005	0.270	-0.005	0.223	0.150	0.162	-2.015	0.000	0.313	0.028
ΔSales/Assets	-0.115	0.000	-0.013	0.308	0.371	0.077	-0.409	0.024	-0.161	0.565
ΔSize	0.038	0.000	-0.031	0.000	0.096	0.380	-0.341	0.000	-0.260	0.122
ΔGrowth	0.003	0.370	-0.001	0.830	-0.034	0.443	-0.018	0.660	0.060	0.422
ΔLev	0.069	0.001	0.016	0.431	1.239	0.001	0.554	0.057	1.455	0.007
$Redca\_Jones_{t-1}$ ($Absacc\_Jones_{t-1}$, MAO_{t-1}, SP_{t-1}, $Restate_{t-1}$)	-0.494	0.000	0.371	0.000	3.222	0.000	5.637	0.000	5.077	0.000
N	10,235		10,235		10,754		10,758		10,758	
R^2 (Pseudo R^2) (%)	37.61		17.45		20.81		34.53		37.59	

Panel D: Results based on Auditor Turnovers Triggered by a Sudden Death or Serious Health Problems of the Incumbent Auditor or the Auditor's Family Members

	ΔRedca_Jones		***ΔAbsacc_Jones***		***ΔMAO***		***ΔSP***		***ΔRestate***	
	coeff.	**p-value**	**coeff.**	**p-value**	**coeff.**	**p-value**	**coeff.**	**p-value**	**coeff.**	**p-value**
AuditorTurnover	0.046	0.338	-0.013	0.766	4.181	0.023	2.299	0.029	0.539	0.672
Big_N AuditorTurnover*	0.018	0.731	-0.008	0.863	-3.313	0.085	-2.505	0.068	-0.159	0.927
Big_N	0.013	0.781	-0.013	0.765	3.944	0.021	2.868	0.017	-0.598	0.693
ΔROA	0.614	0.034	-0.448	0.094	-2.131	0.451	-7.805	0.013	0.003	0.999
ΔLoss	0.001	0.964	-0.047	0.047	0.782	0.334	-2.173	0.001	0.976	0.305
ΔSales/Assets	-0.201	0.039	0.026	0.766	1.991	0.445	-0.154	0.917	1.905	0.301
ΔSize	0.061	0.316	-0.145	0.020	-0.071	0.906	0.258	0.754	0.000	1.000

$\Delta Growth$	0.014	0.583	-0.007	0.822	0.407	0.355	0.739	0.097	-0.257	0.364
ΔLev	-0.070	0.672	0.031	0.848	4.330	0.185	-2.059	0.424	0.986	0.776
$Redca\_Jones_{t-1}$ ($Absacc\_Jones_{t-1}$, MAO_{t-1}, SP_{t-1}, $Restate_{t-1}$)	-0.515	0.019	0.356	0.071	5.846	0.000	6.520	0.000	5.930	0.002
N	180		180		182		182		182	
R^2 (Pseudo R^2) (%)	40.18		30.34		43.43		41.59		34.43	

Panel E: Expanding Unexpected Turnovers to Include Mandatory Rotations and Natural Retirements

	ΔRedca_Jones		***ΔAbsacc_Jones***		***ΔMAO***		***ΔSP***		***ΔRestate***	
	coeff.	**p-value**	**coeff.**	**p-value**	**coeff.**	**p-value**	**coeff.**	**p-value**	**coeff.**	**p-value**
AuditorTurnover	-0.025	0.297	0.014	0.536	0.678	0.259	0.574	0.286	-1.183	0.108
Big_N AuditorTurnover*	0.029	0.240	-0.018	0.424	-0.956	0.147	-1.008	0.097	1.205	0.143
Big_N	-0.005	0.744	-0.009	0.519	0.704	0.170	0.880	0.057	-0.930	0.069
ΔROA	0.532	0.000	-0.074	0.423	-1.415	0.230	-5.504	0.000	-0.839	0.721
$\Delta Loss$	0.003	0.791	-0.018	0.092	0.070	0.810	-2.320	0.000	0.333	0.383
$\Delta Sales/Assets$	-0.110	0.002	-0.044	0.108	0.298	0.551	-0.211	0.604	0.657	0.432
$\Delta Size$	0.024	0.092	-0.043	0.001	0.340	0.205	-0.520	0.079	-0.115	0.862
$\Delta Growth$	-0.001	0.822	-0.002	0.637	-0.010	0.923	0.026	0.827	-0.161	0.361
ΔLev	0.123	0.002	0.024	0.473	0.033	0.977	-1.363	0.162	-0.028	0.989
$Redca\_Jones_{t-1}$ ($Absacc\_Jones_{t-1}$, MAO_{t-1}, SP_{t-1}, $Restate_{t-1}$)	-0.498	0.000	0.409	0.002	2.903	0.000	5.770	0.000	5.310	0.000
N	1244		1244		1256		1256		1256	
R^2 (Pseudo R^2) (%)	37.53		24.01		16.34		33.66		40.96	

Please refer to Appendix 1 for variable definitions.
The sample period is from 1995–2011.
For Panel A, $\Delta Redca\_Jones$ is the change in *Redca_Jones* from time *t*-1 to time *t*+1(year *t* is the last year of the incumbent auditor, and *t*+1 is the first year of the incoming auditor). $\Delta Absacc\_Jones$ is the absolute value of change in *Redca_Jones* from time *t*-1 to time *t*+1. ΔMAO (ΔSP, $\Delta Restate$) equals one if the company experiences a change in *MAO* (*SP*, *Restate*), either from zero to one or vice versa, from time *t-1* to *t+1*.

For Panel B to E, we use the OLS regression for Δ*Redca_Jones* and Δ*Absacc_Jones* as the dependent variables, and Logit regression for Δ*MAO*, Δ*SP*, and Δ*Restate* as the dependent variables. P-values are calculated based on White (1980) heteroscedastic consistent standard errors. For Panels B, D and E, each turnover sample is matched with a control sample using propensity score matching based on size, ROA, leverage, industry, and year. *AuditorTurnover* is an indicator variable equal to 1 if an audited client experiences an unexpected signing partner turnover, and 0 otherwise. The dependent variables and all control variables with Δ are also computed as the change in that specific variable from time *t*-1 to *t*+1.

TABLE 5

Changes in Audit Quality Surrounding Auditor Turnovers: Additional Analyses

Panel A: Differences in Demographic Characteristics between the Outgoing and the Incoming Auditors

	Big 4		Non-Big 4		Difference	
	Mean	Med.	Mean	Med.	t-stat.	z-stat.
Δ*Age*	-7.864***	-7.000***	-0.892	-2.000	-5.17***	-4.02***
Δ*Experience*	-3.893***	-3.000***	-0.932	-1.000	-3.84***	-3.51***
Δ*Gender*	-0.062	0.000	0.014	0.000	-0.84	-0.74
Δ*NumClient*	3.295***	3.000***	0.527	0.000	2.46**	2.68***
Δ*AccUnder*	0.085	0.000	0.125	0.000	-0.85	-0.68
IndExp	0.475***	0.000***	0.528***	1.000***	0.41	0.40

Panel B: Audit Quality Changes Surrounding Unexpected Auditor Turnovers with Larger Discretionary Accruals

	Δ*Redca Jones*		Δ*Absacc Jones*		Δ*MAO*		Δ*SP*		Δ*Restate*	
	coeff.	**p-value**	**coeff.**	**p-value**	**coeff.**	**p-value**	**coeff.**	**p-value**	**coeff.**	**p-value**
AuditorTurnover	-0.034	0.137	0.011	0.644	0.017	0.978	-0.028	0.971	-0.770	0.229
Big_N AuditorTurnover*	0.069	0.060	0.019	0.592	0.862	0.277	-0.160	0.875	0.434	0.639
Big_N	-0.046	0.128	0.017	0.632	-0.032	0.960	0.298	0.680	-0.337	0.629
Control Variables	Included		Included		Included		Included		Included	
N	314		314		335		335		335	
R^2 (Pseudo R^2) (%)	47.38		20.01		12.18		44.70		30.30	

Panel C: Audit Quality Changes Surrounding Unexpected Auditor Turnovers after Controlling for Number of Clients Possessed by the Incoming Auditors

	∆*Redca_Jones*		∆*Absacc_Jones*		∆*MAO*		∆*SP*		∆*Restate*	
	coeff.	p-value	coeff.	p-value	coeff.	p-value	coeff.	p-value	coeff.	p-value
AuditorTurnover	-0.035	0.352	0.026	0.468	1.213	0.321	0.996	0.377	0.503	0.696
Big_N AuditorTurnover*	0.051	0.199	-0.011	0.773	-1.438	0.273	-1.027	0.419	1.476	0.413
Big_N	-0.048	0.099	-0.020	0.460	1.323	0.205	0.797	0.420	-1.832	0.269
Control Variables	Included		Included		Included		Included		Included	
N	314		314		337		337		337	
R^2 (Pseudo R^2) (%)	25.20		9.21		24.00		36.54		50.25	

Please refer to Appendix 1 for variable definitions.
The sample period is from 1995–2011.
For Panel A, *∆Age* is the age of successor audit partner minus that of the outgoing auditor. *∆Experience* is the number of years that successor auditor has served as a signing partner minus that of the outgoing auditor. ∆*Gender* is the proportion of successor auditor who has a different gender from the outgoing audit partner. *∆NumClient* is the number of clients signed by the successor audit partner minus that of the outgoing auditor. ∆*AccUnder* is the proportion of successor auditor who has an accounting bachelor degree minus that of the outgoing audit partner. *IndExp* is the proportion of successor audit partners who has experience of signing a client with the same industry membership as the new client. The total number of outgoing and incoming audit partners used to compute ∆*Age*, ∆*Gender*, ∆*NumClient*, ∆*Experience*, *∆AccUnder*, and *IndExp* is 382, 395, 410, 410, 75, and 408, respectively. **, *** Indicate significance at the 0.05 and 0.01 levels, respectively, using two-tailed tests.
For Panels B and C, we use the OLS regression for ∆*Absacc_Jones* and ∆*Redca_Jones* as the dependent variables and Logit regression for ∆*MAO*, ∆*SP*, and ∆*Restate* as the dependent variables. P-values are calculated based on White (1980) heteroscedastic consistent standard errors. Each turnover sample is matched with a control sample using propensity score matching based on size, ROA, leverage, industry, and year. ∆*Redca_Jones* is the change in *Redca_Jones* from time *t*-1 to time *t*+1 (year *t* is the last year of the incumbent auditor, and *t+1* is the first year of the incoming auditor). ∆*Absacc_Jones* is the absolute value of change in *Redca_Jones* from time *t-1* to time *t+1*. ∆*MAO (*∆*SP*, ∆*Restate)* equals one if the company experiences a change in *MAO* (*SP*, *Restate*), either from zero to one or vice versa, from time *t-1* to *t+1*. *AuditorTurnover* is an indicator variable equal to 1 if an audited client experiences an unexpected signing partner turnover, and 0 otherwise. All control variables are the same as those shown in Panel B to Panel E in Table 4.